CLAIMS

What is claimed is:

1.   A brightness control method for an image processing device, comprising:

determining whether a highlight mode is enabled; and

reducing a pedestal voltage range by a first predetermined value and expanding a brightness control voltage range by a second predetermined value, if the highlight mode is enabled.

2.   The brightness control method according to claim 1, wherein the first and the second predetermined values are substantially the same.

3.   A brightness control apparatus for an image processing device, comprising:

a memory that stores brightness control data, first pedestal level data predetermined for a normal mode, second pedestal level data predetermined for a highlight mode, and level-up data;

a controller that determines whether the highlight mode is enabled, and if the highlight mode is enabled, produces first and second driving voltages using the brightness control data, the second pedestal data, and the level-up data stored in the memory, wherein the first driving voltage is calculated by applying the second pedestal data to a first driving function, and the second driving voltage is calculated by adding the brightness control data and the level-up data and applying the added data to a second driving function; and

a signal processor that amplifies an input image signal using the first and the second driving voltages provided from the controller, and outputs the amplified image signal.

4.   The brightness control apparatus according to claim 3, wherein the first and the second pedestal level data are determined such that the first driving voltage value obtained by applying the second pedestal level data to the first driving function is lower than a voltage value obtained by applying the first pedestal level data to the first driving function.

5.   The brightness control apparatus according to claim 3, wherein the first and the second pedestal level data, and the level-up data are determined such that the difference between the voltage values obtained by applying the first and second pedestal level data to the first driving function is substantially the same as a voltage value obtained by applying the level-up data to the second driving function.

6.   A brightness control apparatus to reduce a range of a pedestal driving voltage and correspondingly expand the range of a brightness control voltage to control a brightness characteristic of an image signal of an image processing device in a highlight mode, comprising:

a memory storing data;

a controller determining whether the highlight mode is enabled, and if the highlight mode is enabled, using the stored data to produce the pedestal driving voltage and the brightness control voltage; and

a signal processor that amplifies the image signal using the pedestal driving voltage and the brightness control voltage, and outputs the amplified image signal.

7.   The brightness control apparatus according to claim 6, the data comprising:

brightness control data;

first pedestal level data of a normal mode;

second pedestal level data of a highlight mode; and

level-up data.

8.   The brightness control apparatus according to claim 7, wherein the controller calculates the pedestal driving voltage by applying the second pedestal level data to a first driving function.

9.   The brightness control apparatus according to claim 8, wherein the controller calculates the brightness control voltage by adding the brightness control data and the level-up data and applying the added data to a second driving function.

10. The brightness control apparatus according to claim 9, wherein the first and second pedestal level data are determined such that the pedestal driving voltage obtained using the second pedestal level data is lower than a pedestal driving voltage obtained using the first pedestal level data.

11. The brightness control apparatus according to claim 10, wherein the level-up data is determined such that the brightness control voltage is increased by a value corresponding to the difference between the pedestal driving voltages based on the first and second pedestal level data.

12. The brightness control apparatus according to claim 6, further comprising:
a key input device to control the image processing device; and
an interface unit to control the image processing device externally.

13. The brightness control apparatus according to claim 6, further comprising a highlight processor to process the image signal to enhance the brightness of an entire image or a selected part thereof.

14. The brightness control apparatus according to claim 13, further comprising:
a pre-amplifier;
an amplifier; and
a display device, wherein the image signal, having passed through the highlight processor, is amplified through the pre-amplifier and the amplifier with amplification corresponding to a contrast adjustment value, and is applied to the display device which converts the image signal into an optical signal.

15. The brightness control apparatus according to claim 14, further comprising a contrast auto-limit circuit to control a contrast of a screen of the display device by detecting a beam current in a secondary coil and varying a contrast voltage of the pre-amplifier in accordance with the detected beam current.

16. A method to control brightness of an image processing device, comprising:

determining whether a highlight mode is enabled; and

reducing a pedestal voltage range and expanding a brightness control voltage range by substantially similar values if the highlight mode is enabled.

17. The method according to claim 16, further comprising enabling the highlight mode using a key input device or an external device through an interface unit.

18. The method according to claim 16, wherein the reducing comprises:

reading brightness control data;

reading second pedestal level data of the highlight mode; and

reading level-up data.

19. The method according to claim 18, wherein the reducing comprises:

calculating a pedestal driving voltage by applying the second pedestal level data to a pedestal driving function; and

calculating a brightness control voltage by adding the brightness control data and the level-up data to a brightness driving function.

20. The method according to claim 19, further comprising processing an image signal using the pedestal driving voltage and the brightness control voltage.

21. The method according to claim 16, wherein if the highlight mode is not enabled, a controller reads a first pedestal level data of the normal mode from a memory, and determines a pedestal driving voltage to be a voltage obtained by applying the first pedestal level data to a pedestal driving function.

22. The method according to claim 20, wherein the controller reads a brightness control data, and calculates a brightness control voltage by applying the brightness data to a brightness driving function.

23. The method according to claim 22, further comprising processing an image signal using the pedestal driving voltage and the brightness control voltage.

24. A brightness control apparatus to reduce a range of a pedestal driving voltage and correspondingly expand the range of a brightness control voltage to control a brightness characteristic of an image signal of an image processing device in a highlight mode implemented as a computer readable code on a recording medium, comprising:

a memory storing data;

a controller determining whether the highlight mode is enabled, and if the highlight mode is enabled, using the stored data to produce the pedestal driving voltage and the brightness control voltage; and

a signal processor that amplifies the image signal using the pedestal driving voltage and the brightness control voltage, and outputs the amplified image signal.

25. The brightness control apparatus according to claim 24, the data comprising:

brightness control data;

first pedestal level data of a normal mode;

second pedestal level data of a highlight mode; and

level-up data.

26. The brightness control apparatus according to claim 25, wherein the controller calculates the pedestal driving voltage by applying the second pedestal level data to a first driving function.

27. The brightness control apparatus according to claim 26, wherein the controller calculates the brightness control voltage by adding the brightness control data and the level-up data and applying the added data to a second driving function.

28. The brightness control apparatus according to claim 27, wherein the first and second pedestal level data are determined such that the pedestal driving voltage obtained using the second pedestal level data is lower than a pedestal driving voltage obtained using the first pedestal level data.

29.   The brightness control apparatus according to claim 28, wherein the level-up data is determined such that the brightness control voltage is increased by a value corresponding to the difference between the pedestal driving voltages based on the first and second pedestal level data.

30.   The brightness control apparatus according to claim 24, further comprising:

a key input device to control the image processing device; and

an interface unit to control the image processing device externally.

31.   The brightness control apparatus according to claim 24, further comprising a highlight processor to process the image signal to enhance the brightness of an entire image or a selected part thereof.

32.   The brightness control apparatus according to claim 31, further comprising:

a pre-amplifier;

an amplifier; and

a display device, wherein the image signal, having passed through the highlight processor, is amplified through the pre-amplifier and the amplifier with amplification corresponding to a contrast adjustment value, and is applied to the display device which converts the image signal into an optical signal.

33.   The brightness control apparatus according to claim 32, further comprising a contrast auto-limit circuit to control a contrast of a screen of the display device by detecting a beam current in a secondary coil and varying a contrast voltage of the pre-amplifier in accordance with the detected beam current.